

of the new City and County Hospital which the City of San Francisco is building at an expense of two million dollars."

Referring to our Dispensary, upon which the College has always looked as one of its best assets, you say, "but the material, though adequate in amount, was not thoroughly used by Cooper Medical College," and underneath, "Date of visit, May, 1909." The latter seems to explain the former and also why it is said, "no surgical rounds are made in the wards of the Hospital." Instruction to the students in the Dispensary stops at the end of April, our commencement being in the beginning of May. It was impossible therefore for our visitor by personal inspection to ascertain how the clinical material in the Dispensary was used for teaching purposes. We do not wish to imply that improvement could not be made in our Dispensary service; we are far from assuming such an attitude, but we are positive that good scientific records are kept in all departments of the Dispensary, that the heads and assistants are competent teachers, and that the students have been given full opportunity to avail themselves of the clinical material as well by didactic clinics as by work in small sections in actual contact with the patients, as is shown by the enclosed schedule which was rigorously adhered to.

Thus not only has our chief source of clinical material and post mortems been ignored, and the fact that the College was not in session when the visit was made been overlooked, but Cooper Medical College with its Faculty, numbering fifty-six, of whom twelve were full professors; its eighty students; its many well supplied laboratories whose apparatus is inventoried at \$15,000, although worth more; its several salaried professors and instructors, who receive \$10,000 per annum; and its yearly expenditure of \$25,000 for educational purposes, is scarcely given credit in the report for existence.

Copies of this letter have been sent to the Board of Trustees of Leland Stanford, Jr., University and to President David S. Jordan; to the California State Medical Society; to the American Medical Association; to the Association of American Medical Colleges; and to Mr. Abraham Flexner of Carnegie Foundation for the Advancement of Teaching.

By order of the Faculty of Cooper Medical College.

HENRY GIBBONS, JR., Dean.

### THE PROBLEM OF PRE-MEDICAL EDUCATION.\*

By T. W. HUNTINGTON, M. D., San Francisco.

Conspicuous among many educational movements of the past three decades is that which concerns the portals to a medical career. From the educational as well as economic viewpoint we now approach this question with clearer vision and better understanding.

Gradually the curriculum has expanded to include many collateral branches of recent development, until it has reached the stage of overcrowding, and the conventional period of four years for its accomplishment is hardly sufficient.

With this manifest increase in the number of departmental branches, the problems presented are relatively more complex, and to the untrained, immature mind, simply bewildering. In schools of the *better* type, the knowledge of physics, chemistry

and biology which underlie the work of the first year student renders matriculation and progress impracticable for the high school graduate.

A reading knowledge of French and German, without which the student will be measurably blind to two-thirds of the world's literature, is regarded as an essential in the student's equipment, forming another preliminary exaction in respect to time and energy.

Responsibility for the educational policy, here outlined, formidable though it be, is assumed by, indeed it is the boast of universities such as Harvard, Johns Hopkins, Columbia and many others which are engaged in the promotion of medical interests. These institutions are at once insistent upon the maintenance of their ideals, and unyielding in their attitude.

Ten years ago, Prof. H. P. Bowditch, of Harvard, wisely said: "One of the hopeful signs of the times, as regards medical education, is the growing tendency of the better schools to ally themselves with universities, and of universities to establish and foster medical departments."

This sentiment has become widespread and actuates, in a large way, those who control the destinies of modern schools. In fact, medical colleges have uniformly welcomed university affiliation without hesitation.

Aside from this consideration, the medical graduate must weigh carefully his chance of passing the state medical board's examination, which is rapidly becoming more and more formidable. The broad training which is manifestly an essential from this point of view, forms a strong incentive for matriculants to select the university type of school, and the life history of the proprietary school presents an interesting problem. Have such schools any assurance of perpetuity? and will the short route to a medical career be possible in the future?

The academic institutions have set a rapid pace along the entire line. Their only difference of sentiment has to do chiefly with the scope of pre-medical training and the time requisite for its attainment; *upon the main issue they are and certainly will be uncompromising*, and it seems reasonably certain that the weaker schools will find it impossible to maintain their status and keep in the race indefinitely.

President David Starr Jordan's opinion upon this point is significant: "I think that every medical school which receives men with less than two years of scientific training in college or its equivalent, is a source of harm, and not of help—I do not believe the proprietary school is a type to be maintained."

Under existing conditions the establishment or rehabilitation of a medical school suggests a magnifi-

\* Read at the Fortieth Annual Meeting of the State Society, Sacramento, April, 1910.

cent undertaking. Generous provision must be made for a multiplicity of interests. This means expensive equipment of physiological, bacteriological, chemical, anatomical, pathological and animal laboratories. There must be maintained a modern hospital with liberal endowment of free beds; a free dispensary, various clinical laboratories and an X-ray plant. Finally liberal provision must be made for paid professorships, at least for the first two, and ultimately for the clinical years. President Pritchett, of the Carnegie Foundation for the Advancement of Learning, after an exhaustive investigation of the subject, tells us frankly, "that the conduct of a single scientific department of the first two years costs easily \$10,000 per annum. A number of institutions, economically conducted, spend \$15,000 or more on a single subject like pathology or physiology. A medical school which is not in a position to spend \$50,000 or \$60,000 per annum on the work of its first two years has omitted some part of its legitimate duty." Finally he says, "It will be difficult for any school to do its fair duty by a moderate body of students with a yearly income of less than \$100,000." From other sources we learn that in twenty-five leading medical colleges, to teach each student costs from two hundred to seven hundred dollars or even more each year.

The burden has become so great that many universities, now maintaining fairly close relations with medical departments, view the financial problem with profound seriousness. In no quarter is the significance of this consideration more keenly felt than by those interested in the promotion of proprietary schools, with small endowment, whose main reliance is upon tuition fees. In a word, the conduct of manifold departmental interests entails a fixed expense wholly disproportionate to any income from tuition. This can only be met by governmental aid or by large private benefactions. Such resources are best sought through university influence whereby there is afforded ample guaranty for the perpetuity and efficient conduct of the institution. Moreover, the school which has for its motive, or at least for one of its motives, self-promotion or selfish gain, will less and less appeal to the sympathies and the generosity of philanthropists.

At the present time there are one hundred and fifty medical schools in this country. Many of these are maintained upon the basis of illy-paid or gratuitous services upon the part of teachers, and a system of instruction palpably inadequate. Dr. Pritchett insists that for the next century one-half or possibly one-third of this number, generously endowed and wisely administered, will furnish ample educational facilities for all interested.

Let us now consider whether or not the short route to a medical career will be one of the possibilities of the future. It is to be said first and always that to enter upon a career and to succeed

in it are two distinct undertakings, and that in no human relation is the debasing influence of unpreparedness more sadly palpable than in the daily work of the physician. This consideration alone furnishes adequate incentive for the youth of to-day and of the future, at any sacrifice, to acquire his training from such source as will best assure him of success in the struggle for existence, which is now fierce and will become more so in coming years.

There is a sophistry, almost official in certain quarters, which pleads the cause of the poor-boy-aspirant to a career in medicine as an apology for schools of easy access, whose exactions at the beginning and end of a curriculum are markedly below those of the university type.

It is well known that tuition fees in the best schools are low in comparison to the cost to the institution, and it is apparent that the difference in actual cost of medical training in reputable schools of both types is insignificant. It is also a fact that living expenses can be minimized in one place as well as another.

As a matter of plain truth, for the poor boy of to-day there exist possibilities for full preparedness, not less than for his more fortunate fellow, provided he enter the race with high ideals and reasonable energy, prepared to make the necessary sacrifice. It should be more widely known that any boy of promise is encouraged to participate in the vast educational resources of Yale, Harvard, and other similar institutions without fear of serious financial embarrassment.

Finally let us consider the time exaction of the modern university medical curriculum and its true significance.

There is an English law maxim, "Time runneth not against kings." With equal force this axiom applies to the man whose scientific ideals incite him to prolonged self-sacrifice.

Undoubtedly the best intellectual endowment of the novitiate finds expression in the word enlightenment, which means distinctly a reasonable development of the faculty which makes for appreciation of exactness of method and correctness of interpretation.

Briefly, the teacher of to-day sees the utter hopelessness of the student who is lacking in that degree of culture which places him in command of a definite facility of execution, an accomplishment which is rarely found in the high school graduate of average age and experience. Accordingly, to the high school training there is now added two years of academic life before the student is confronted with the abstruse problems of professional preparation.

During this period the student obtains a new viewpoint. He is given an opportunity for the development of ideals, and by contact with trained minds he acquires added power of concentration and of sustained effort. He adds liberally to his store of knowledge and to his capability for logical deduction, and from any standpoint it is safe to say that the achievement of these two years will largely exceed that of any preceding period. So clearly appreciated is this fact that not a few of the student body voluntarily extend the time for pre-medical study to three or even four years.